

REMARKS

Applicant thanks the Examiner for a thorough examination of the present application, but respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Claims 1, 5, 6, and 10 are currently being amended. After amending the claims as set forth above, claims 1, 3, 5, 6, 8, 10, and 12 are now pending in this application.

35 U.S.C. § 103(a)

In the outstanding Office Action with a mailing date of January 16, 2009, claims 1, 5, 6, and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,638,371 to Raychaudhuri et al (“Raychaudhuri”) in view of U.S. Patent No. 5,978,380 to Kobayashi et al. (“Kobayashi”). Claims 3, 8, and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Raychaudhuri in view of Kobayashi and further in view of U.S. Patent No. 6,754,182 to Aznar (“Aznar”). Applicant respectfully traverses these rejections for at least the reasons set forth below.

Regarding independent claims 1, 5, 6, and 10, the Office Action asserts that each feature required by the claims is disclosed in either Raychaudhuri or Kobayashi. Applicant respectfully disagrees. As discussed in further detail below, Applicant submits that a plurality of features recited in the claims are not disclosed in either Raychaudhuri or Kobayashi, whether considered alone or in combination. However, before discussing these deficiencies, Applicant feels that it may be helpful to provide a brief summary of aspects of the present application.

The present application is related to the effective use of an ATM channel band. This effective use is achieved by controlling the ATM channel based on the state of a wireless channel. One way of controlling the ATM channel based on the wireless channel is by using a band in the ATM channel similar to the band used in the wireless channel. For example, and as discussed in paragraphs [0039]-[0042] of the present application, if it is determined that the data rate of the wireless channel is 1 Mbps, then the ATM channel is instructed to use a band of 1 Mbps. Similarly, if it is determined that the data rate of the wireless channel is 8

Mbps, then the ATM channel is instructed to use a band of 8 Mbps. In addition to this way of controlling the ATM channel based on the wireless channel, the present application also alters priority of relaying data to the ATM channel based on the status wireless channel. For example, and as discussed in paragraphs [0045]-[0049] of the present application, if it is determined that the state of a wireless channel is bad, an instruction is sent to set the priority of data relay to the ATM channel to high. Therefore, even when the wireless state is bad, data is preferentially relayed to the ATM channel to enable the overall delay to be reduced as much is possible.¹

Applicant respectfully submits that neither Raychaudhuri nor Kobayashi teaches or suggests concepts similar to those described above. Instead, Raychaudhuri discloses a base station (*see, e.g.*, element 38 in Figure 2) which is interfaced with a “wireless ATM network” and a “fixed ATM network.” (*see, e.g.*, Figure 2). The base station is configured to convert wireless ATM cells (*see, e.g.*, element 30 in Figure 2) into standard 48 byte ATM cells (*see, e.g.*, element 40 in Figure 2). Accordingly, Raychaudhuri basically teaches a base station which converts packets between a wireless and fixed ATM network.

Raychaudhuri, however, does not teach or even suggest at least (i) obtaining state information of the wireless channel from said wireless unit and said coding and decoding unit; (ii) state information of the wireless channel that is a data rate of the wireless channel; (iii) giving channel control instruction to use a band of the ATM channel appropriate for the state of the wireless channel; (iv) instructing a channel control unit to set priority to each data received from the plurality of mobile apparatuses; (v) setting a priority according to a state of each wireless channel through which the data in question is transmitted and received; (vi) setting a priority for conducting relay to an ATM channel; and (vii) setting a higher priority for relaying each data received to said ATM channel if the state of the wireless channel is below a predetermined threshold (and vice versa).

¹ Applicant notes that the present application includes various other novel concepts; however, these concepts were highlighted because there seems to be a misunderstanding with regard to these aspects of the present application.

With regard to the Office Action's reliance on Kobayashi, Applicant respectfully submits that Kobayashi cannot cure the deficiencies associated with Raychaudhuri because Kobayashi is also deficient with respect to each feature enumerated above. Kobayashi discloses a common signal channel ("CSC") interconnecting two exchanges with flexible capacity based on traffic volume. In a first embodiment of Kobayashi, the traffic volume within the CSC is detected and, based on the detected traffic volume, a determination is made as to whether or not the capacity of the CSC needs to be changed. (*See, e.g.*, col. 3, lines 45-61). In other words, the channel capacity of the CSC is adapted based on the traffic volume in the CSC. In the second embodiment, the total channel capacity is shared between the CSC, the speech channel, and a "remaining segment." (*See, e.g.*, Figure 6 and col. 4, lines 63-68). In this embodiment, both the speech channel and CSC may use a portion of the "remaining segment" during times of increased volume. However, if both the speech channel and the CSC desire a portion of the "remaining segment," the speech channel is given priority to use the "remaining segment." (*See, e.g.*, col. 4, lines 1-5).

Kobayashi, however, does not teach any of the above enumerated features required by independent claims 1, 5, 6, and 10. Each feature is discussed in detail below.

(i) obtaining state information of the wireless channel from said wireless unit and said coding and decoding unit

Each of independent claims 1, 5, 6, and 10 discuss obtaining state information of the wireless channel from said wireless unit and said coding and decoding unit. Although Kobayashi may be broadly interpreted as obtaining "state information" of a channel, Kobayashi does not mention anything about obtaining such information from a wireless unit *and* a coding and decoding unit. Accordingly, Kobayashi is deficient with respect to at least this element required by independent claims 1, 5, 6, and 10.

(ii) state information of the wireless channel that is a data rate of the wireless channel

Each of independent claims 1, 5, 6, and 10 recite that the state information of the wireless channel is the data rate of the wireless channel. In the "Response to Arguments" section of the Office Action, it is asserted that the volume illustrated in Figure 7 reads on the

claimed “data rate.” Applicant respectfully disagrees. In Kobayashi’s description of Figure 7, it is discussed that “traffic volumes in the common signal channel” at particular times are compared to thresholds to determine capacity requirements. (*See, e.g.*, col. 7, lines 36-56). Thus, the state information is related to the volume within the CSC at a particular time. For example, the volume in the CSC may be 20 Megabytes at a particular time. However, this volume measurement is not directly correlated to the data rate or throughput of the wireless channel. This is because a channel may have a high volume and a high data rate, or alternatively, a channel may have a high volume and a low data rate. As is known in the art, a data rate is effected by a plurality of factors, e.g., signal-to-noise ratio, bit error rate, distance between transceivers, packet size, header size, communication medium, processing capabilities, etc. Accordingly, merely because Kobayashi discusses providing a traffic volume measurement, it does not mean that a **data rate** measurement is provided to a module – since there is no direct relationship between the two values. Thus, Applicant respectfully submits that Kobayashi is deficient with respect this element required by of independent claims 1, 5, 6, and 10.

(iii) giving channel control instruction to use a band of the ATM channel appropriate for the state of the wireless channel

Each of independent claims 1, 5, 6, and 10 require giving a channel control instruction to use a band of the ATM channel appropriate for the state of the wireless channel. In Kobayashi’s first embodiment, Kobayashi discloses giving an instruction to a “channel capacity change executing means” to increase or decrease the size the CSC. (*See, e.g.*, col. 3, lines 45-61). In Kobayashi’s second embodiment, Kobayashi discusses that a “common channel capacity controller” determines when the CSC or the speech channel needs to use the capacity of the “remaining segment.” (*See, e.g.*, col. 5, lines 3-25). Thus, Kobayashi gives instructions about **an amount of capacity required by a CSC or speech channel**. In contrast, the present claims require giving a channel control instruction to use **a band of the ATM channel appropriate for the state of the wireless channel**. Applicant respectfully submits that an instruction related to the amount of capacity of a CSC or speech channel is not the same as an instruction about the use of an appropriate band of an ATM channel.

Moreover, Kobayashi discusses that the channel measured and the channel related to the instruction are the *same*. In contrast, the present claims discuss measuring wireless channel and providing instructions related to an ATM channel. Thus, the channel measured and the channel related to the instruction are the *different*.

For at least the above reasons, Applicant submits that Kobayashi does not teach or suggest this claim element.

(iv) instructing a channel control unit to set priority to each data received from the plurality of mobile apparatuses

Each of independent claims 1, 5, 6, and 10 discuss instructing a channel control unit to set priority to each data received from the plurality of mobile apparatuses. As discussed above, Kobayashi discusses that, if both the speech channel and the CSC desire a portion of the “remaining segment,” the speech channel is given priority to use the “remaining segment.” (See, e.g., col. 4, lines 1-5). In contrast, the claims of the present application require *setting priority to each data received* from the plurality of mobile apparatuses. Applicant respectfully submits that Kobayashi does not mention anything about setting priority *to each particular data*. Rather, Kobayashi gives priority to a *particular type of channel* (i.e., the CSC or speech channel). Since giving priority to one type of channel over another is not the same as giving priority to each data received, Applicant submits that Kobayashi is also deficient with respect to this claim element.

(v) setting a priority according to a state of each wireless channel through which the data in question is transmitted and received

Each of independent claims 1, 5, 6, and 10 discuss setting a priority according to a state of each wireless channel through which the data in question is transmitted and received. As discussed above, Kobayashi merely teaches giving priority to one *type* of channel over another. Kobayashi, however, does not set a priority according to a state of each wireless channel *through which the data in question is transmitted and received*. In other words, Kobayashi focuses priority on the type of channel and not the status of the particular channel

that has provided the piece of data in question. Accordingly, Applicant submits that Kobayashi is also deficient with respect to this claim element.

(vi) setting a priority for conducting relay to an ATM channel

Each of independent claims 1, 5, 6, and 10 discuss setting a priority for conducting relay to an ATM channel. As discussed above, Kobayashi gives a speech channel priority to a “remaining segment.” In stark contrast, the independent claims discuss setting a priority ***for conducting relay to an ATM channel***. Applicant submits that nothing in Kobayashi teaches or even hints at a priority related to relaying data to an ATM channel. As such, Kobayashi cannot properly read on this claim element.

(vii) setting a higher priority for relaying each data received to said ATM channel if the state of the wireless channel is below a predetermined threshold (and vice versa)

Each of independent claims 1, 5, 6, and 10 discuss setting a higher priority for relaying each data received to said ATM channel if the state of the wireless channel is below a predetermined threshold (and vice versa). In other words, if the state of the wireless channel is low, a high priority is set for relaying each data received to said ATM channel. If the state of the wireless channel is high, a low priority is set for relaying each data received to said ATM channel. Among other things, this feature enables data from a wireless channel in a bad state to be compensated by preferentially relaying the data to the ATM channel. As such, the total relay time for the data is reduced. Applicant submits that there is no such feature in Kobayashi. Instead, Kobayashi only discusses that giving one type of channel priority in using a “remaining segment.” Such a priority has no relation to ***relaying each data received to an ATM channel based on threshold determinations***. As such, Applicant respectfully submits that Kobayashi is deficient with regard to this claim element.

Conclusion

Because none of the references cited by the Examiner, either separately or in combination with each other, teaches or suggests all of the features recited in independent claims 1, 5, 6, and 10, Applicant submits that independent claims 1, 5, 6, and 10 are

patentable over these cited references. Furthermore, because dependent claims 3, 8, and 12 are each directly or indirectly dependent upon independent claims 1, 6, and 10, Applicant submits that each of these claims are allowable for at least the same reasons discussed above, in addition to their own reasons which Applicant reserves the right to argue at a later time if necessary.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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